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LEO LESQUEREUX

BY

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THE NAME OF AGASSIZ is, in a historical sense, associated with two others, Guyot and Lesquereux. These three men, natives of Switzerland, colleagues at the Academy of Neuchâtel, and confreres in observational science, emigrated to America upon the suppression of the Academy by the Geneva Revolutionary Council in 1848. Agassiz came first and at his urging came the others. Lesquereux landed in Boston in the latter part of the same year with his wife and five children. He was then more than forty years old, deaf, and unable to speak a single word of English.

Leo Lesquereux was born on November 18, 1806 in the village of Fleurier, Canton of Neuchâtel. His parents were Huguenot, and of moderate circumstances. His father was a manufacturer of watch springs. Young Lesquereux attended the village school and later attended college in Neuchâtel in preparation for the University. He earned his tuition by tutoring, since his father could afford only the cost of board. At the age of 19 he was ready for the University, but found he was unable to finance the expense of education in Germany. Consequently he accepted a professorship in French at Eisenach, Saxony. After a few years he became engaged to a young woman, and accepted a more remunerative call at La

Chaux de Fonds near his home. He soon married, but within three years became totally deaf. Lesquereux was unable to continue teaching, and in order to provide for his family, joined in partnership with his father. However, each Sunday he would dash off into the mountains to gather mosses for study with his inexpensive microscope.

At this time the government was interested in peat bogs as a potential source of cheap fuel for the poor, and offered a gold medal of twenty ducats for the best study on peat. Lesquereux entered into the competition and won the prize with his creditable memoir entitled *Recherches sur les Tourbieres du Jura.* Up to the time of his death this was the most authoritative work on European peat. This publication resulted in the closer association between Agassiz and Lesquereux and in the grant from the King of Prussia which enabled him to travel over western Europe wherever peat was known to occur. The change of government soon after altered circumstances, so that all those patronized by the former government were removed from their positions.

The reputation which Lesquereux quickly acquired as a bryologist was responsible for his successes in America. Although his first work in this country was for Professor Agassiz – working up the plants collected on the Lake Superior expedition – he was called to Columbus, Ohio in December 1848 by William S. Sullivant. Mr. Sullivant was a man of wealth who devoted his time to the study of mosses and who, by 1845, with the publication of the *Musci Allegheniensis,* was the foremost bryologist in America. He desired Lesquereux to collaborate with him and publish the enormous collections he had accumulated. For two years he hired Lesquereux full time,and thereafter generously paid him for part time employment. In 1856 they jointly published the *Musci*

Exsiccati Americana which underwent several editions, the last in 1865. Lesquereux also wrote practically the entire Latin text for Sullivant's *Icones Muscorum.*

Upon the sudden death of Sullivant, all his extensive collections and library were deposited in Harvard University, and at the urgent request of Professor Asa Gray, Lesquereux was invited by his old colleague, Professor Agassiz, to come to Harvard to complete the proposed *Manual of North American Mosses.* This he agreed to do serving a portion of each year. Lesquereux worked diligently but his sight began failing him so that by 1872 he was unable to do close work. Fortunately Professor Thomas P. James was engaged to complete the comparatively few remaining microscopic determinations, but his untimely death again delayed the work until 1884 when it was finally published as the *Manual of North American Mosses.* It is still a useful as well a classic memoir.

Should Lesquereux have accomplished little else he would have earned a lasting place in the history of American botany. Yet this was the lesser side of his scientific attainments. He has been titled the *Nestor of American Paleobotany.* It was Lesquereux who gave to the collection of fossil plants in the Botanical Museum a status unique in the whole world. It is the type American collection, the actual basis for the study of all American fossil floras. No other museum in the world can boast of possessing all the original and fundamental floras accumulated in the first thirty years of its country's paleobotanic research. Lesquereux published his first paper on fossil plants in 1854, (Journ. Bost. Soc. Nat. Hist. vol. 6) when he described as new, 110 species of Carboniferous plants mostly from the Anthracite Coal Fields of Pennsylvania. This was followed by a more extensive survey of the Coal Flora in 1858 in Professor H. D. Rogers'

voluminous *Geology of Pennsylvania.* Almost annually thereafter Lesquereux published notices, papers, or monographs on paleobotanical discoveries.

He was by no means limited or provincial in his interest, although his name is usually linked with the study of Coal Measures plants. As early as 1860 he published a report on Miocene plants from Brandon, Vermont, and soon after on an Eocene flora from Mississippi. These were followed by reports on Cretaceous and Tertiary floras from the Western Territories.

The reputation as a paleobotanist which Lesquereux quickly acquired was really phenomenal. Material from all parts of the country was sent to him for study. Professor Agassiz engaged Lesquereux from 1865 to 1871 to work up the collection of fossil plants, then kept in the Museum of Comparative Zoology. Although he continued to maintain his legal residence in Columbus, Lesquereux spent several months of each year with the collection, and borrowed new or unusual specimens for study at his private laboratory. He published or rather submitted his first reports on the collection in 1867, and again in 1868. Whereas the collection was at this time remarkably rich in European specimens from classic localities and correspondingly poor in American plants, Lesquereux donated his collection of types in 1868. Subsequently all materials passing through his hands were deposited in the Museum Collection.

Each major contribution to American paleobotany marked a major advance in the status of the collection. Beginning in 1879 there appeared his great *Coal Flora of Pennsylvania.* First the Atlas of plates, then volumes one and two (bound together) 1880, and finally volume three in 1884. Simultaneously he was publishing the Miocene flora of California, a Permian collection from Colorado, and a Cretaceous flora from Colorado. The

types of all of these, except those of the third volume of the *Coal Flora*, are in the Collections of the Botanical Museum. These few late types found their way with the Lacoe collection, to the National Museum.

It is scarcely believable that such a valuable collection could become "lost." Yet this is exactly what happened, in spite of the splendid care the collection has had at the hands of Dr. Robert Tracy Jackson and Dr. J. A. Cushman, and the splendid storage facilities made available through the generosity of Mr. Elliot C. Lee and Professor G. L. Goodale, then director of the Botanic Garden.

For more than fifty years the collection of Lesquereux types has been supposedly lost, strayed, stolen, or sent somehow to Europe. Perhaps for this belief Lesquereux himself is to blame. R. D. Lacoe of Pittston, Pennsylvania carried Lesquereux* in the latter's last years as a semi-pensioner. He paid him a generous sum for the few types still in his private cabinet and paid him a salary to identify the Lacoe collection, which subsequently was given to the National Museum. Any species not found in this collection were presumably lost. Apparently, Lesquereux failed to mention that he had transferred to the Harvard Museum all specimens he received in Columbus. That is how the famous Lakes collection came here as well as others of lesser size and importance.

Lesquereux as a describer of species, hundreds of them, made the pioneer taxonomic contributions to North American paleobotany. However his interests were broader than this, species are means to an end, and that end is the distribution and correlation of entire floras in geographic space and geologic time. In this sense he was a modern. He significantly recognized a host of cosmopoli-

*Communication from Dr. David White dated July 16, 1934.

tan northern hemisphere plants and pointed out the marked resemblance between European and American fossil floras. He recognized as such the process of speciation in space and time. Furthermore it was he who demonstrated that the Miocene floras of California are identical with those in Colorado and east of the Rocky Mountains, proving beyond doubt the recency of Rocky Mountain uplift. He demonstrated the differences as well as similarities between European and American floras and denied any former continental union between the two excepting northern land bridges. He used, with success, fossil plants as "horizon markers" to identify coal seams, even in such complicated strata as the Anthracite Coal Fields.

In 1868 the collection contained 2500 specimens belonging to some 500 species. By 1885, the time of final donations from Lesquereux, it had grown to 10,000 specimens of 2000 "varieties." This entire priceless assortment has passed through the hands of Lesquereux. Within the past fifty years by purchase and donation the collection has been trebled in specimens and doubled in species–truly a remarkable collection unequalled in America! Its value scientifically has in no manner diminished, but rather increased proportionately with the years. Since many of the fossil plants possessed cosmopolitan distributions, or at least are believed to have, it is necessary that each of Lesquereux's species be accurately known. The great majority of American fossil types published prior to 1890 are poorly described and inadequately figured – if figured at all. Consequently neither American paleobotanists nor their European colleagues know the true nature of these long-used specific names of reputed validity.

During the final period of his life, Lesquereux suffered from the loss of his faculties more and more. As a

result the work of the closing years of his career are of little lasting value. Until the end, he kept working and writing. Most of his manuscript, his editing, and his proof-reading was accomplished in near-blindness. He maintained a warm personal correspondence with his many scientific friends until his peaceful death at his home in Columbus, Ohio, October 25, 1889 at the age of 83. To one he wrote: "about publications of mine, you have more titles than I know of, for I have forgotten many and many are not worth much."

Lesquereux's pioneer work in American paleobotany will long be remembered, and in no less degree will his careful study of American mosses. Far more of a challenge is his untiring work of high order in the face of trying circumstances and pathetic loss of faculty at an age of greatest productivity.

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TO GENERA AND SPECIES

ERRATA

page 24, line 1
for Turialba read Turrialba

page 31, line 8
for 60 read 54

page 31, line 34
for for read from

page 55, line 23
for Centr. Am. read Centr.-Am.

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